Facilities and Equipment Maintenance System (FEM)

HQ, US Army Corps of Engineers

IRMWC

May 1998

AGENDA

- *Introduction*
- *Problem Areas*
- *Background*
- *Goals*
- *Facilities & Equipment Management*
- *Summary*

Problem Areas

- *USACE-Wide Material Weakness, FY 91.*
- *Lack of Standardized Business Processes*
- *AAA Audit Issues - Standardization and Equipment Utilization.*
- *No Density List to Identify Facilities/Equipment Requiring Maintenance*
- *Aging Equipment and Infrastructure.*
- *Shrinking Workforce.*
- *Funding*
- *Preventive Maintenance.*

F E M - DoD'S CHOICE

On 10 July 1995, the Assistant Secretary of Defense for Command, Control, Communications and Intelligence Issued a Memorandum Selecting FEM as a DoD Migration System.

BACKGROUND

- *1992 - CELD and CECW met to Identify a Need for a Computerized MM System*
- *1993 - HQ CECW Commissioned a Study That Recommended an Integrated MM System*
- *1993 - CELD and CECW Partnership Signed*
- *1993 - STRAP Process Produced a Maintenance System (Needs & Requirements Document).*
  - *STRAP Showed MAXIMO Meets 94% of COE Requirements out of the box.*

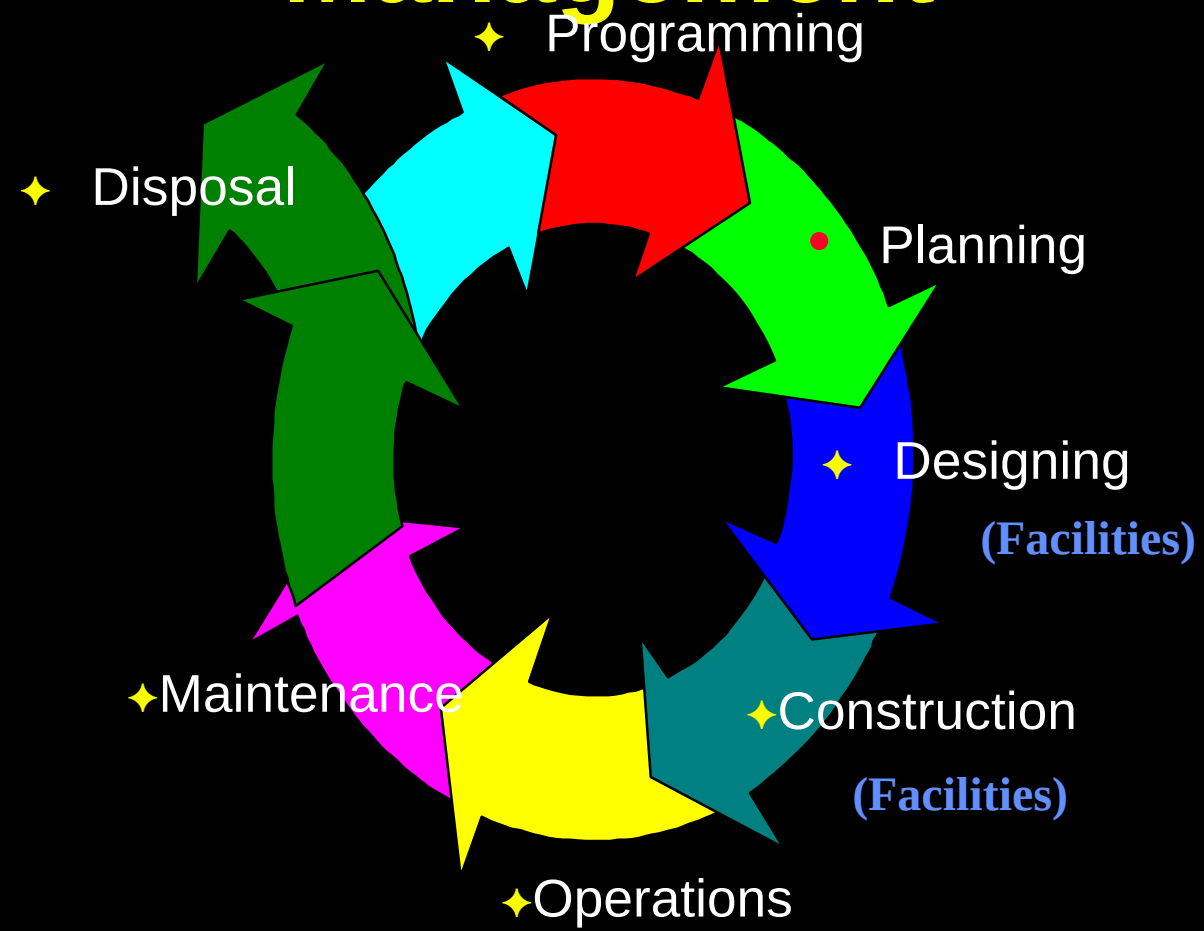
BACKGROUND

- *1996 - Howard University Study*
  - *Analyze DoD Systems.*
  - *FEM Met 99%.*
- *1996 - HQUSACE Begins Discussions With JLSC to Implement FEM.*
- *1997 - Proposal from JLSC to Provide Software and Implementation Services for FEM or MAXIMO out-of-the-box.*
- *1997 - Review of JLSC Proposal.*
- *1998 - Cost Benefit Analysis Completed.*
- *1998 - HQUSACE Negotiating With NMSO for Implementation of FEM.*

The Goals of FEM

- *Reduce Operating Costs*
- *Integrate Business Process*
- *Exchange Data With CEFMS*
- *Improve the Preventive Maintenance Program*
- *Reduce Breakdown Maintenance*
- *Schedule and Plan Operational Requirements*
- *Provides Upward Reporting Capability*
- *Standardized Business Processes Corps-Wide*
- *Provides Density List of Facilities and Equipment*

Facilities and Equipment Management



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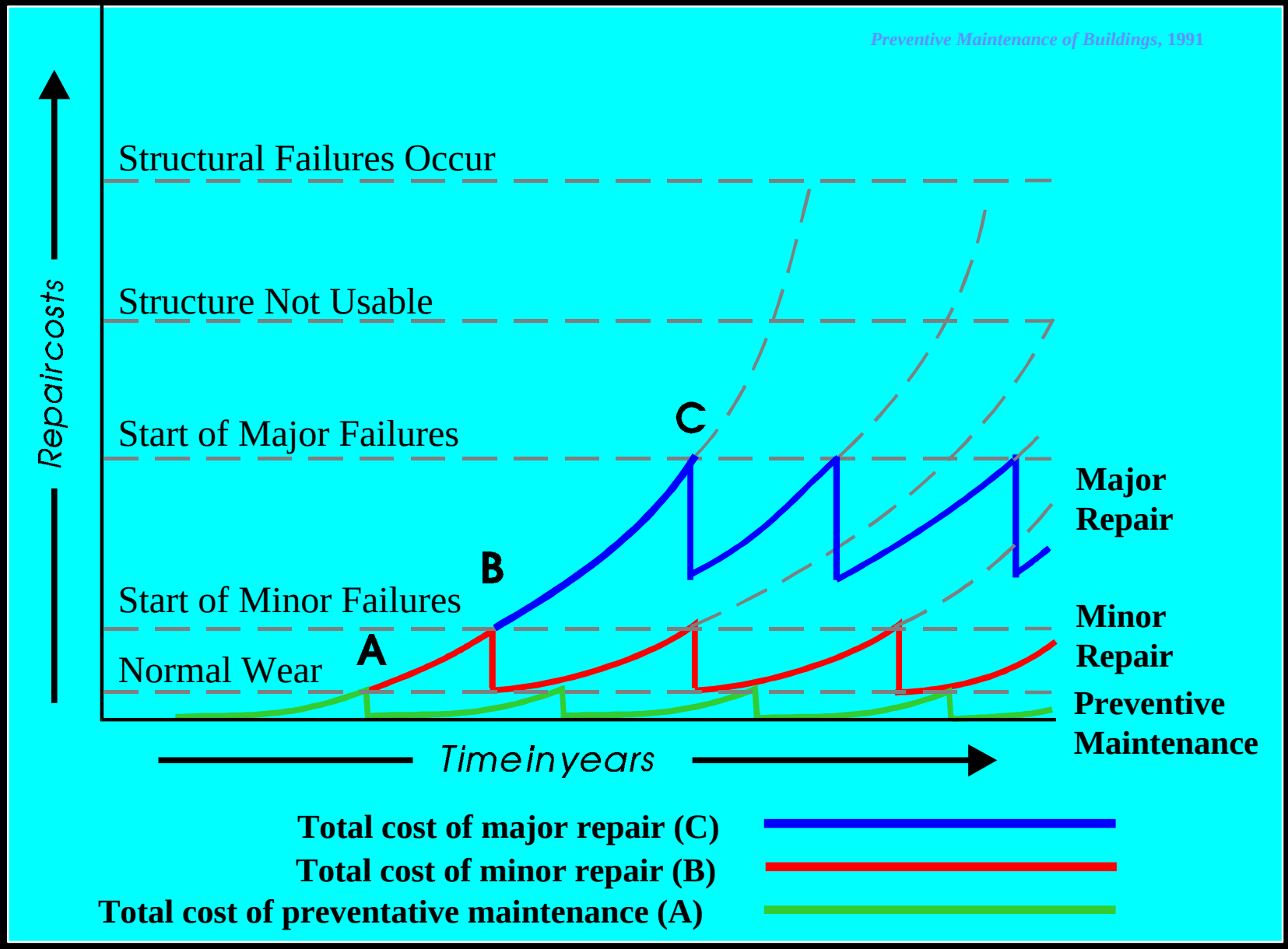

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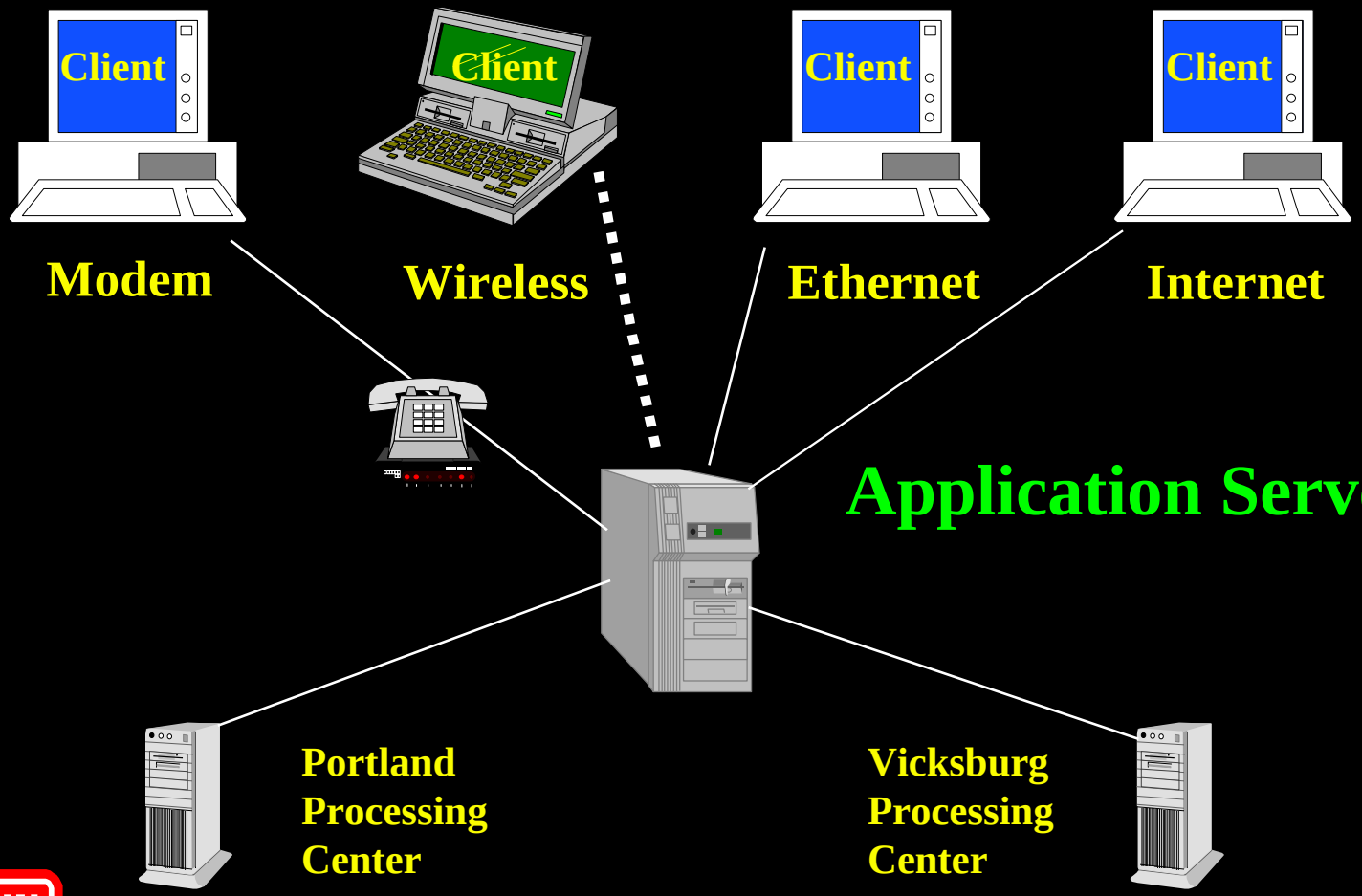
Federal Sites with MAXIMO

- ***Bureau of Reclamation*** *(COTS = MAXIMO)*
- ***Navy PWC, San Diego*** *(COTS = MAXIMO)*
- ***MEDCOM*** *(Govt. Sys. and COTS = MAXIMO)*
- ***US Coast Guard*** *(Standardized w/MAXIMO Advantage)*
- ***GSA*** *(COTS tests with FIS and MAXIMO)*
- ***FDIC*** *(COTS = MAXIMO)*
- ***Defense Supply Center Columbus, DLA*** *(COTS = MAXIMO, implementation phase)*
- ***Joint Logistics Systems Center*** *(COTS = FEM)*
- ***US Army Corps of Engineers*** *(COTS= MAXIMO, DYNASTAR, MP2)*
  - *Portland, Seattle, Walla Walla Districts, Wash. Aqueduct*

Multi-user Application Server Technology



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Madigan Army Medical Center (MAMC)

- *Success Story*
- *Operational 1990*
- *Using MAXIMO for Maintenance Tracking*
- *MAXIMO Implementation Process Begun During Design Phase*
- ***Over 20,000 Items in Database***
- *Facility is Center of Expertise for MEDCOM*

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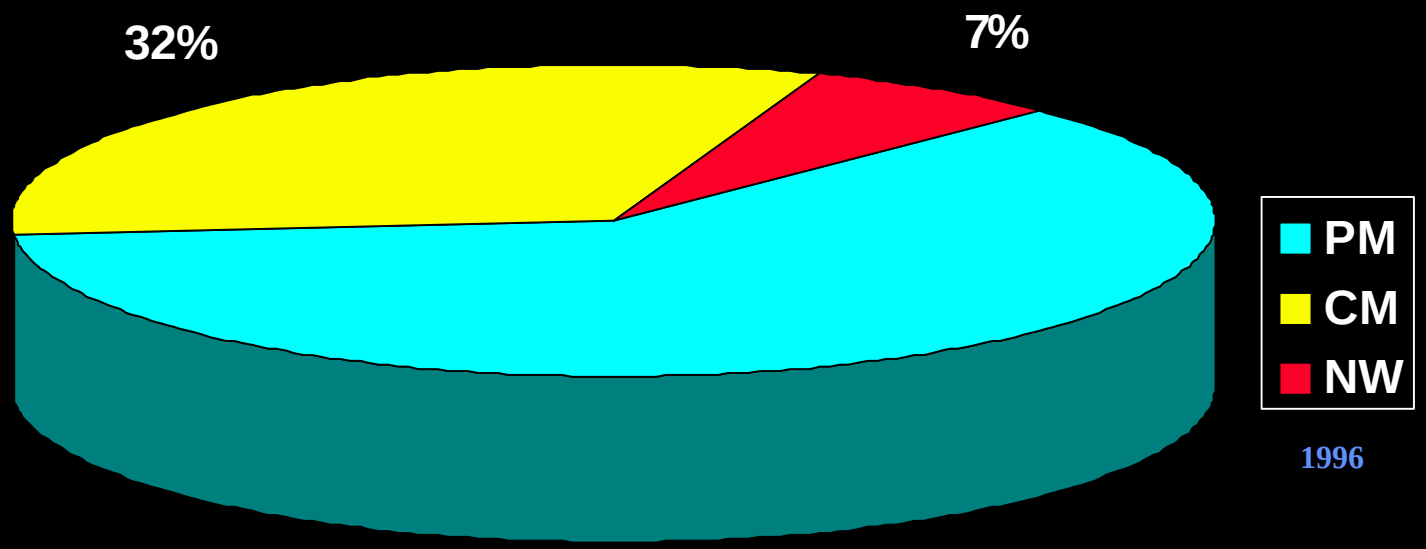
MAMC Workload Summary



Preventive Maintenance : 61%

Corrective Maintenance: 32%

New Work: 7%

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TANGIBLE BENEFITS

- *Opportunity to Replace Legacy Systems (VIMS, APPMS, Inventory Module in CEFMS)*
- *Provides Equipment/Facilities Density List.*
- *Provides Maintenance Labor Cost History.*
- *Provides Repair Parts Cost History.*
- *Documents Equipment Repair History.*
- *Tracks Contract Maintenance Costs.*
- *Used to Program Replacement Equipment.*
- *Eliminates Redundant Data Input.*

INTANGIBLE BENEFITS

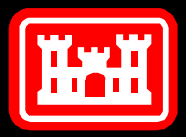
- *Allows Managers To Make Informed Decisions .*
- *Improves Equipment Utilization.*
- *Improves Repair Parts Management.*
- *Tracks Equipment Down Time.*
- *Satisfies Upward Reporting Requirements.*
- *Provides Capability of Upward Reporting.*
- *Capability to Interface With Legacy Systems.*
- *Provides Visibility of Equipment Readiness at Emergency Operations Center (EOC).*
- *Provides Real Time Status.*
- *Reduce Capital Equipment Acquisitions*

MAXIMO Project Implementation Examples

- *Bonneville Lock and Dam - $100k, 10 users*
- *Seattle Corps of Engineers - $160k, 20 users*
- *Navy FISC - $90k, 20 users*
- *Madigan AMC - $3.0M, 20 users*
- *Tripler AMC - $100k, 10 users*
- *Reynolds ACH - $50k, 10 users*
- *Washington Aqueduct Division - $200k, 20 users*
- *Defense Supply Center, Columbus - $300k, 20 users*

Return on Investment
(for successful integration of FEM system)
A.T. Kearney Inc. / Industry Week 1992

- *Maintenance Productivity Improvement - 28%*
- *Equipment Downtime Reduction - 20%*
- *Lower Material Cost - 19%*



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Case Study for Return on Investment

- *42% Productive Time for Journeyman Day*
- *10% Increase in Productivity as Target (~1 hour)*
- *50 Journeymen on Staff*
- *Improvement of 50 Hours per day*
- *$35.00 per hour Total Burdened Labor Cost*
- *$1,750 per day Improved Time*
- *232 Productive days per Year*
- *$406,000 Total Efficiency Savings per Year*

Return on Investment

PEOPLE	Savings	ANNUAL HOURS SAVED Corps Wide	Equivalent to:	Annual $ Saved
No. of Craftsman 4963 4963 4963				

INVENTORY	Inventory Value	Reduction in Savings (%)	Annual $ Saved
66 66 66 66 66 66 66 66 66			

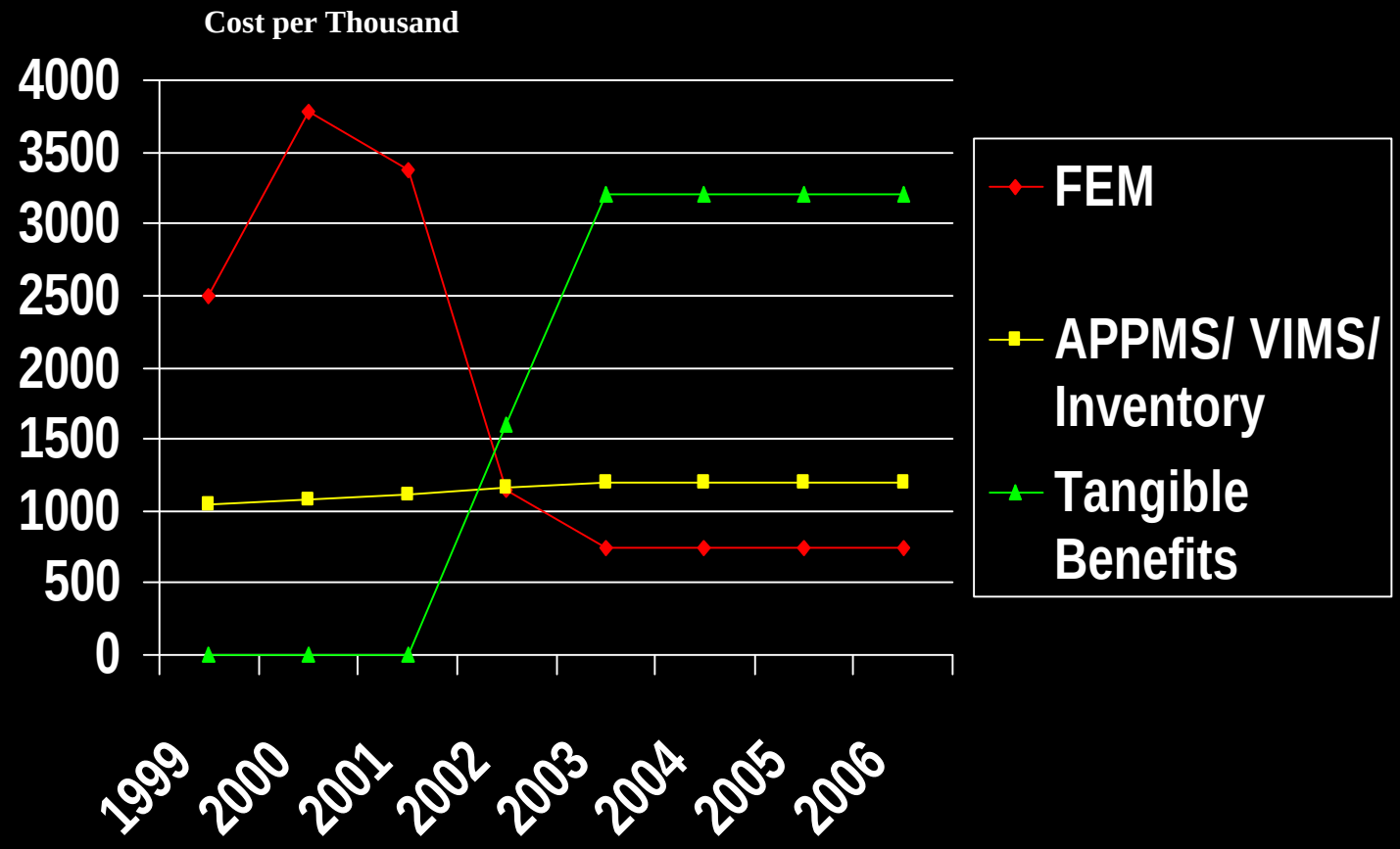
Return on Investment
for the Corps of Engineers

- *Personnel "Wrench on" %Time Increase - 1%*
- *Lower Inventory Cost - 10%*
- *Reduces Warehouse Space - 10%*
- *Consolidated System Administration*
- *Roll up and Accountability Capability*
  - *EOC visibility (includes readiness/availability)*
- *Reduces Breakdown Maintenance*
- *Opportunity to Replace Legacy Systems (VIMS, APPMS, inventory module in CEFMS.)*

Return on Investment
for the Corps of Engineers

- *Personnel "wrench on" time increase - 1%*
  - *4963 Personnel Directly Affected by FEM*
  - *1% Savings is 5 minutes per day*
  - *1860 hours in a man year*
  - *$35/hour - Conservative Hourly Estimate*
- *4963 x 1% x (1860) = 92,312 hours Saved Annually Corps-Wide*
- *$35 x 92,312 = $3,230,913 ANNUAL SAVINGS*

FEM SYSTEM Costs



- Total Development and Fielding Costs $11 million.
- Sustainment Costs Estimated $750,000 per year

(Based on Cost Estimate provided to Corps by JLSC)

SUMMARY

- *Need to Implement FEM*
  - *Need 1998 $300K to Finalize Cost Benefit Analysis*
  - *Need 1999 $2.5K Mil (Fee for Service)*
  - *Designate NWD as Initial Operating Site*
- *System Should be Integrated/Interfaced With CEFMS.*